



French Broad River

K-12 Watershed Education Program



Educating and empowering the next generation of watershed stewards



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RiverLink's French Broad River K-12 Watershed Education and Volunteer Stewardship Programs are ready to RIVERLINK your students!

Dear French Broad River School,

Are your students RIVERLINKED?

Do they know that their local river is the third oldest in the world?! How do their actions affect water quality? How can they get involved to keep our rivers clean?

RiverLink is the non-profit organization spearheading the economic and environmental revitalization of the French Broad River watershed as a destination to live, work and play. We are dedicated to educating and empowering the next generation of watershed stewards.

Programs are FREE for all K-12 students in the French Broad watershed!

All public, private, charter, and home schools, as well as youth afterschool and camp programs, are invited to GET RIVERLINKED!

Our programs will focus on:

- French Broad River ecology
- Water quality and quantity
- Student engagement in scientific investigation
- Science as a link to personal decision making
- Environmental awareness, appreciation, stewardship, and activism
- National curriculum like Project WET (Water Education for Teachers)
- Links to NC Standard Course of Study

RiverLink will provide:

- Trained and experienced RiverLink staff and volunteers
- Field trips to local streams
- Lesson materials
- FUN and educational lessons plans

Enclosed is a list of programs available to K-12 students in the French Broad watershed. Education programs can be combined with volunteer projects. We are also available to schedule prep and follow-up lessons.

Please fill out and return the sign up sheet on page 8 if you are interested in having RiverLink coordinate a program for your students. You can also sign up online (see website address below).

Please feel free to contact us with any question about the program. We look forward to working with you!

**Sincerely,
RiverLink**

Education Coordinator

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Fax: (828) 253-6848

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www.riverlink.org/programs.asp#enviro_ed

*Give your students a preview with RiverLink's Online Learning Center at
<http://seris.info/RiverLink/main.shtml>*

French Broad River K-12 Watershed Education Programs

Lessons for all grade levels

*These programs can be adapted for any age group.
Interested in multiple lessons? See 'Lesson Links' for other lessons that compliment these!*

Kids in the Creek *Grades: K-12* *Lesson Links: EnviroScape, Macro. Mayhem*
Topics: Water quality, ecology *Setting: stream* *Time: approx. one hour*
**Liability waiver required– see page 9*

What is the ultimate field trip location that is low cost, convenient, fun, *and* educational? A river, creek, or stream! It is likely that one is located near your school, and there is no better way for students through this hands-on lesson.

"Kids in the Creek" provides an outdoor experiential learning opportunity for students to learn about factors affecting water quality of our streams and the aquatic organisms that live there.

Students will be active participants in catching and identifying aquatic insects—based on the types of bugs and their pollution sensitivity, we will calculate a Pollution Tolerance Index for the stream we are studying.

Older students can conduct chemical water tests for pH, turbidity, nitrates, phosphates, and dissolved oxygen.

Ask us about working with NC Fish and Wildlife to include fish sampling!

RiverLink provides waders upon request and all lesson materials. Students **must** wear shoes over the waders that can get wet (crocs are ideal).

Contact us to locate an accessible stream near your school!

Some options are: Davidson River (Transylvania County), Bent Creek, Reed Creek (Botanical Gardens)



EnviroScape™ *Grades: K-12* *Lesson Links: All*
Topics: Watersheds, water quality *Setting: classroom or stream* *Time: 30 minutes*

EnviroScape is plastic model of a watershed that shows students the effects that pollution can have on water quality. This is a great educational tool that teaches the watershed concept in addition to point and non-point source pollution.

Students learn about different components of a watershed and gain an understanding of the role of roads, buildings, animals, factories, and farms. Each student will participate in putting together the pieces of the watershed.



Students will then figure out how human activities in a watershed affect water quality. Cocoa powder and food coloring will represent water pollution– but how do these pollutants travel from the land to the river? Students will create a 'rainstorm' to visualize how storm-water runoff carries pollution such as sediment and chemicals into our waterways. We will also address ways that everyone can help prevent pollution.

French Broad River K-12 Watershed Education Programs

Lessons for all grade levels

Voices of the River

Topics: Art, writing

Grades: K-12

Setting: classroom or stream

Lesson Links: All

Time: 30 minutes



RiverLink annual program, Voices of the River, would like to invite all schools and classes (K-12) to participate in creating art and poetry based on our local rivers. Submissions will be judged by local artist and poet celebrities and be displayed as a several month art exhibit. Winners will be awarded prizes from various local sponsors.

This program offers a very exciting and interesting way for children to learn more about their watershed, while also contributing to an informed appreciation of the natural world. It also helps improve children's literacy and cognitive skills. This type of multidisciplinary, hands-on approach to education nurtures students' creative voices as well, through instruction and practice in art and poetry.

See page 6 for details on the annual Voices of the River Art & Poetry Contest!

All the Way to the Ocean

Grades: PreK-3 **Lesson Links:** Enviroscape, Kids in the Creek

Topics: watersheds, water quality, storm drain run-off

Setting: classroom **Time:** 30 minutes

In a lesson guaranteed to fill the classroom with the sound of rain, brightly colored pictures, and googly-eyed puppets, this lesson teaches students that everything entering storm drains, flows all the way into rivers, streams, and eventually the ocean. The lesson allows for a broad range of interactive participation, as students utilize rainsticks and trash and aquatic life puppets to act out the negative effects of pollution. They also get to don the famous lime green RiverLink Volunteer vests and simulate a real stream clean up. "Volunteers" use pick up litter sticks to take the trash puppets from their friends and place them in a big orange trash bag, giving them a sense of satisfaction and importance. The lesson ends with a river free from trash, the waving of "No Dumping" stickers, and happy sock puppets. As part of the lesson, classes have the option of locating a storm drain near their school placing a real "No Dumping" sticker on it.



French Broad River K-12 Watershed Education Programs

Adapted from Project WET (Water Education for Teachers)

*This is just a sample- contact us for more topics and resources!
Interested in multiple lessons? See 'Lesson Links' for other lessons that compliment these!*

Branching Out

Grades: 3-12

Lesson Links: *Enviroscape*

Topics: *Watersheds, topography*

Setting: *classroom/outside*

Time: *30 minutes*

Students build a model landscape to investigate how water flows through and connects watersheds.

Common Water

Grades: K-8

Lesson Links: *Drop in the Bucket*

Topics: *Water quantity, water users*

Setting: *classroom/outside*

Time: *15 minutes*

Students will play roles of different water users to illustrate how water quality and quantity are affected by growing populations. We will focus on where our water comes from today and in the past.

Drop in the Bucket

Grades: K-8 **Lesson Links:** *Common Water*

Topics: *Water quantity*

Setting: *classroom with tarp/ outside*

Time: *15-30- minutes*

Students will learn how much water exists on earth, what percentage is available for humans to use, and why water is a limited and valuable resource. Students can also calculate how much water their family uses every day, and ways everyone can conserve water.

Incredible Journey

Grades: 3-5

Lesson Links: *Common Water*

Topics: *Water cycle, water quality*

Setting: *large open space- gym, field*

Time: *30 minutes*

With a roll of the die, students simulate the movement of water within the hydrologic cycle: from clouds to rivers to ocean to glaciers, and back again!

Just Passing Through

Grades: 3-5

Lesson Links: *Enviroscape, Planting projects*

Topics: *Water quality, erosion*

Setting: *large open space- gym, field*

Time: *30 minutes*

Students will compare the rates at which water flows down slopes with and without plant cover and identify practices that can prevent erosion and sedimentation in our rivers.

Macroinvertebrate Mayhem

Grades: K-5

Lesson Links: *Kids in the Creek*

Topics: *Ecology, water quality*

Setting: *large open space- gym, field*

Time: *20-30 minutes*

Students play a game of tag to simulate the effects of environmental stressors (water pollution) on aquatic insect populations.

Parameter Water Quality Testing

Grades: 5-12 **Lesson Links:** *Kids in the Creek,*

Planting projects **Topics:** *Water quality* **Setting:** *Classroom* **Time:** *30-45 minutes*

Students will use chemical testing to determine water quality through the parameters of: nitrates, phosphates, pH Level, turbidity, alkalinity, and dissolved oxygen.

Stream Sense

Grades: K-5

Lesson Links: *River of Words and Art*

Topics: *Ecology, art, writing*

Setting: *stream*

Time: *15-20 minutes*

What does your nose know and your ear hear about a stream? Students use their senses to observe a stream, learning there is more to flowing water than meets the eye.

Sum of the Parts

Grades: 3-5

Lesson Links: *Enviroscape*

Topics: *Water quality, art, land use*

Setting: *classroom or outside*

Time: *30 minutes*

By creating their own pieces of riverfront property students demonstrate how different land uses can contribute to the pollution of a river. We will focus on ways everyone can be a river steward.

Voices of the River: Art & Poetry Contest

Details at www.riverlink.org/earthdaycontest.asp

Submission Deadline: April 6, 2011

Entries will be grouped in categories by 2D art, 3D art and poetry for grades: K-2, 3-5, 6-8 and 9-12. All entries should be submitted to RiverLink offices by the submission deadline. Entries will be judged by local artists and poets, RiverLink staff, and volunteers. This program may be offered as an active lesson presented by RiverLink staff. Contact education coordinator to schedule a Voices of the River lesson.

Prizes and recognition: All participants work will be displayed in Holly Library at AB Tech. Participants are also eligible for their artwork to be displayed at various Earth Day events, published in RiverLink's newsletter, or local magazines. Winners will receive prizes from RiverLink and it's sponsors and are invited to be recognized in a award ceremony at Holly Library. All participants will receive a small prize and recognition.

Guidelines:

- **Each entry must a submission form (found on our website) to be eligible:**
-
- **Optional:** Students are encouraged to include a short description of their work, how they chose their topic, and why they think it is important to learn about the French Broad River.
- This contest is open to residents of counties in the French Broad Watershed in North Carolina. (Transylvania, Henderson, Buncombe, Madison, Haywood, Mitchell, Yancey, and Avery counties.)
- Ages 5-19, but youth aged 17-19 must still be enrolled in high school.
- Each contestant may only enter one work per category.
- All entries must be original work.
- Writing must either be typed or written in ink and easy to read.
- Two dimensional artwork may not exceed 11"x17" and be able to hang on a wall
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- Mediums can include crayons, chalk, pencils, paint, ink, markers, photography (at least 8"x10"), collage, or computer art.
- Sculpture may not exceed 1 1/2 feet cubed and must be free standing (Mobiles are also accepted)
- By entering the contest participants agree to allow RiverLink to display, reproduce, and publish the submitted piece.
- Entries can either be mailed to P.O. Box 15488, Asheville, NC 28813-0488 or can be dropped off at the Riverlink office, located at 170 Lyman Street, between 8 a.m. and 5 p.m.
- Entries must be picked up at RiverLink offices by June 5th, 2010 or become RiverLink's property

Volunteer Stewardship Programs

ADOPT-A-STREAM RIVER CLEANUPS

By participating in Adopt-a-Stream your students are helping to protect one of the region's greatest natural resources-our water!

Grades: K-12

Setting: creek/ river

Lesson Links: *Enviroscape, Kids in the Creek*

Time: one to two hours

Topics: Water quality

The Adopt-a-Stream program is a hands-on way for young people to get actively involved in improving the water quality of the French Broad River and its tributaries. This is a very flexible program that gives teams the tools and knowledge to make a difference in the watershed by cleaning up a local stream.

Adopt-a-stream responsibilities:

- Minimum of **2 cleanups** per year
- Track # of bags, volunteers, and hours
- Conduct **1 visual monitoring session** per year
- Report any water related issues/problems to RiverLink

RiverLink will provide trash bags, safety vests, litter pick up sticks, and waders upon request. The Volunteer Coordinator will assist your team in finding a cleanup location and organizing logistics.

Your students will be joining over 60 AAS teams throughout the watershed. We have many school and youth groups that participate- this is a fun and rewarding group activity for all ages!



RIVER PLANTINGS

Help improve the water quality of the French Broad River by planting native plants on the banks of streams and rivers, and removing invasive/ exotic plants!

Grades: K-12

Setting: creek/ river banks

Lesson Links: *Enviroscape, Just Passing Through*

Time: one to two hours

Topics: Water quality

Vegetated riparian buffers and wetlands are critical to the health of our rivers and streams. Plants help filter stormwater runoff, which can carry pollutants from the land to the water. They also hold the banks in place, preventing erosion and sedimentation- the #1 polluter of the French Broad!



Students can also help remove invasive and exotic plants, which are often located on streambanks because their seeds easily travel along river corridors. These non-native weeds prevent natives from protecting water quality.

Rain gardens are planted depressions designed to catch and absorb rainwater runoff from impervious areas like roads and parking lots.

Rain gardens are planted with native plants that absorb water and filter pollution. They also make great habitat for native wildlife and outdoor classrooms for schools! RiverLink can help school groups arrange projects on school property or at nearby streambanks.

French Broad River Watershed Education Program

Sign up sheet

Form also available at http://www.riverlink.org/programs.asp#enviro_ed

Please mail, email or fax this form back to RiverLink at least two weeks before program date

education@riverlink.org ~ (fax) 253-6846 ~ (phone) 252-8474 x.18

ATTN: Education Coordinator PO Box 15488 Asheville, NC 28813-0488

Thank you! The Education Coordinator will contact you soon.

Teacher/ Coordinator:		
School/ Group Name:		
Grade/ Age range:		Number of students:
Title of class if middle or high school:		
Address: <i>*Please include directions to your class, or main office, as well as visitor parking instructions!</i>		
Work Phone :		
Cell Phone :		
Dates & Times: <i>*Please indicate several available dates and times at least two weeks in advance. Programs are available Mon-Fri, 9am-5pm.</i>	1st choice Date: _____ Time: _____ 2nd choice Date: _____ Time: _____ 3rd choice Date: _____ Time: _____	
Lessons:	<input type="checkbox"/> Enviroscape <input type="checkbox"/> Kids in the Creek <input type="checkbox"/> River of Words and Art <input type="checkbox"/> Project WET lesson(s): _____	
If participating in an outdoor class, do you have a creek, stream, or river location in mind? <input type="checkbox"/> No, please help us find a suitable location. <input type="checkbox"/> Yes, I have one in mind! Location: _____		
Please send me more info:	<input type="checkbox"/> Adopt-a-Stream River Cleanups <input type="checkbox"/> River Plantings <input type="checkbox"/> Voices of the River: Art & Poetry Contest Other: _____	
Please tell us how you heard about RiverLink's Watershed Education Program:	<input type="checkbox"/> Email <input type="checkbox"/> Website <input type="checkbox"/> Word of mouth <input type="checkbox"/> Newspaper <input type="checkbox"/> TV News Other: _____	
May we invite the media (TV, newspaper, magazine, etc.) to cover your student's participation in this program? Media coverage may include interviews, photographs, or filming of students. <input type="checkbox"/> Yes <input type="checkbox"/> No		



RiverLink Liability Waiver
Mutual Agreement for Protection from Liability
www.riverlink.org

You must sign the liability waiver to participate!

ned, being the volunteer involved in any RiverLink river cleanup project (hereinafter referred to as the "Project") or being the parent or legal guardian of such a volunteer in the Project, in consideration of my or another's participation in the Project, I hereby, for myself and any volunteer for who I am a parent or legal guardian release, discharge, hold harmless, and forever acquit the *State of North Carolina, the County, the City, RiverLink, or any other local sponsors*, and their officers, agents, representatives and employees from any and all actions, causes of action, claims or any liabilities whatsoever, known or unknown now existing or which may arise in the future, on account of or in any way related to or arising out of participation in the Project. Further, I assume all liability of any non-participants who accompany me. I understand that my waiver has no expiration date.

This waiver is given in the interest of permitting RiverLink to exist and to serve the community at large, and to enable myself and my fellow volunteers to feel free to donate our services to the Project and to help each other without fear of liability.

NAME OF SCHOOL OR ORGANIZATION _____

STUDENT'S NAME _____

PARENT OR LEGAL GUARDIAN'S SIGNIATURE _____ DATE _____

RiverLink Right of Publicity Waiver (optional)

I irrevocably give, grant and convey to RiverLink , its successors, agents, and assigns, without compensation to me from any party, the absolute right and unrestricted permission to copyright and/or use and/or publish: (1) my name, (2) my image or likeness on videotape, and (3) photographic pictures or portraits of me or in which I may be included, in whole or in part, on reproduction in color or black and white, made through any media, in connection with photos or videotape taken of me at RiverLink and/or any location in which I perform work as a RiverLink volunteer for any purpose, including but not limited to the promotion of RiverLink. I further waive any right that I may have to inspect or approve the finished product. The videotape, photographs, and negatives will be the property of RiverLink.

I have read the foregoing before signing below and fully understand its contents. I also understand that this gift is binding on my heirs, successors and assigns.

_____ I agree to allow RiverLink to use my student's image.

_____ I don't agree to allow RiverLink to use my student's image.

PARENT OR LEGAL GUARDIAN'S SIGNIATURE _____ DATE _____

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